

We Claim:

1. A print head for a pagewidth printer, the print head comprising
a substrate that defines a plurality of ink inlet channels; and
5 a plurality of nozzle arrangements that is positioned on the substrate, the nozzle
arrangements being the product of an integrated circuit fabrication process and being in
fluid communication with the ink inlet channels, and defining a pattern which is the
result of carrying out successive replications of one nozzle arrangement with
predetermined rotations and multipliers on a reference grid.
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2. A print head as claimed in claim 1, in which the nozzle arrangements define a
pattern generated by positioning a nozzle arrangement at an angle of approximately 45
degrees to an axis of the reference grid and replicating the nozzle arrangement without
rotation to obtain a first group of nozzle arrangements.
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3. A print head as claimed in claim 2, in which the nozzle arrangements define a
pattern generated by replicating the first group of nozzle arrangements a predetermined
number of times with a 180 degree rotation to obtain a second group of nozzle
arrangements.
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4. A print head as claimed in claim 3, in which the nozzle arrangements define a
pattern generated by replicating the second group of nozzle arrangements a
predetermined number of times with no rotation to obtain a third group of nozzle
arrangements.
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5. A print head as claimed in claim 4, in which the nozzle arrangements define a
pattern generated by replicating the third group of nozzle arrangements a predetermined
number of times with no rotation to obtain a fourth group of nozzle arrangements.
- 30 6. A print head as claimed in claim 5, in which the nozzle arrangements define a
pattern generated by replicating the fourth group of nozzle arrangements a predetermined
number of times with no rotation to obtain a fifth group of nozzle arrangements.

7. A print head as claimed in claim 6, in which the nozzle arrangements define a pattern generated by replicating the fifth group of nozzle arrangements a predetermined number of times with no rotation to obtain a sixth group of nozzle arrangements.

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8. A print head as claimed in claim 7, in which the nozzle arrangements define a pattern generated by replicating the sixth group of nozzle arrangements a predetermined number of times with no rotation to obtain a seventh group of nozzle arrangements.

10 9. A method of fabricating print head, the method comprising the steps of:
forming a unit cell on a reference grid, the unit cell representing a nozzle arrangement to be fabricated on a substrate;
carrying out successive replications on the unit cell with predetermined rotations and multipliers to form a plurality of unit cells on the reference grid; and
15 fabricating a plurality of nozzle arrangements on the substrate using the plurality of unit cells.

10. A method as claimed in claim 9, which includes the step of positioning the unit cell at an angle of 45 degrees relative to an axis of the reference grid and replicating the unit cell a predetermined number of times without rotation to obtain a first group of unit cells.
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11. A method as claimed in claim 10, which includes the step of replicating the first group of unit cells a predetermined number of times with a rotation of 180 degrees to obtain a second group of unit cells.
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12. A method as claimed in claim 11, which includes the step of replicating the second group of unit cells a predetermined number of times without rotation to obtain a third group of unit cells.
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13. A method as claimed in claim 12, which includes the step of replicating the third group of unit cells a predetermined number of times without rotation to obtain a fourth group of unit cells.

5 14. A method as claimed in claim 13, which includes the step of replicating the fourth group of unit cells a predetermined number of times without rotation to obtain a fifth group of unit cells.

10 15. A method as claimed in claim 14, which includes the step of replicating the fifth group of unit cells a predetermined number of times without rotation to obtain a sixth group of unit cells.

15 16. A method as claimed in claim 15, which includes the step of replicating the sixth group of unit cells a predetermined number of times without rotation to obtain a seventh group of unit cells.

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